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09/486,908	05/11/2000	STEFAN PFAB	P00.0365	9541

7590

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Schiff Hardin & White  
Patent Department  
7100 Sears Tower  
CHICAGO, IL 60606-6473

EXAMINER

ANDERSON, MATTHEW D

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 04/04/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/486,908

Applicant(s)

PFAB, STEFAN

Examiner

Matthew D. Anderson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☒ Claim(s) 8 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Response to Amendment***

2. In response to the amendment filed 3/26/03:  
claims 6-8 have been amended, and the corresponding objections and USC 112 rejections have been withdrawn;  
the title has been amended, and the corresponding objection has been withdrawn.

### ***Allowable Subject Matter***

3. Claims 8 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest the second output start address being related to, but different from, the first output start address by a scope defined by a wiring of the multiplexer.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-7 and 9-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Pawlowski (US Patent # 5,787,475).

7. With respect to claims 1 and 9, Pawlowski discloses a data storage device (main memory) (see column 4, lines 5-15) comprising:

memory cells having stored data with selectable output addresses (see column 4, lines 34-45, 54-60, and figure 1, item 14), wherein the specific starting address provided by a request of data is used to determine which cache line or consecutive cache lines in memory contain a beginning portion of the requested data and outputs the requested data with cache lines, which are considered to be the selected output start address;

wherein the storage device (main memory) responds to a data output request (peripheral device) by outputting the stored data beginning with a selected output start address (see column 4, lines 34-45 and column 5, line 66 to column 6, lines 10; and column 6, lines 19-35 and 50-59), wherein the specific starting address provided by the request of data is used to determine which cache line or consecutive cache lines in memory contain a beginning portion of the request data, and outputting the requested data with cache lines or consecutive cache lines, which are considered to be the selected output start address;

wherein selectable output start addresses are spaced from one another such that an amount of data that can be stored between neighboring output start addresses is smaller than an amount of data in response to the data output request (see column 6 lines 30-35; column 7, lines 15-25; column 9 line 56 to column 10, line 15; column 11, lines 45-58, and column 11, line 64 to column 12, line 8). Data retrieved by the I/O controller to determine which cache line of data contains the beginning portion of address requested by the peripheral from the memory. If this beginning portion of the address is in the first cache line, then the data output to requested data by the first cache line. However, if the retriever determines that a next consecutive cache line contains the beginning portion of the requested data, the retriever increments the starting address and uses the incremented starting address to request the consecutive cache lines of data from memory. In all situations, a first cache line of consecutive cache lines, the data stored in the neighboring starting address is less than the output address since if the portion of the starting address provided by the requested data is in the first cache line, the output transfers to requested data by first cache line; and if it is greater than the first cache line, the output transfers by two consecutive cache lines.

8. With respect to claims 2 and 10, Pawlowski discloses a the selected output start address (beginning portion of started address for outputting the data requested by a cache line) is determined utilizing address data (peripheral device) applied to the data storage device (main memory) (see column 4, lines 34-45 and column 5, line 66 to column 6, line 10).

9. With respect to claims 3 and 11, Pawlowski discloses:

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the selected output start address is determined by further utilizing adaptation data (data retriever) applied to the data storage (main memory) (see column 9, lines 22-42; and column 9, line 64 to column 10 line 15);

the adaptation data (data retriever) is related both to the output start address to be employed and an address that is defined by the address data (peripheral device) (see column 6, lines 30-35).

10. With respect to claims 4 and 12, Pawlowski discloses:

output terminals (main memory output terminals) (see figure 1, items 14 and 26);

an interface (I/O module) provided between memory cell of the data storage device (main memory) and the output terminals (see figure 1, items 14, 18, 24, 26, and figure 2, items 16, 42, 44, and column 6, lines 19-25).

11. With respect to claim 6, Pawlowski discloses using a prefetch system wherein the first cache line and second cache connected as a consecutive cache line for transferring the data to a requested data (peripheral device), and based on the beginning portion of the address provided by the requested data, if the starting address is greater than the first cache line, a consecutive line will be retrieved (see column 4, lines 54-60; column 5, line 66 to column 6, line 19, and column 7, lines 15-25). In other words, data stored with an output start address selected from the group consisting of a first output start address and a second output start address are through-connected.

12. With respect to claims 7 and 14, Pawlowski discloses the first output start address (beginning portion of the address provided by peripheral device for cache line output from the main memory) is an address that is represented by the address data (peripheral device) applied to the data storage device (main memory) (see column 5, line 59 to column 6, line 10).

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13. With respect to claims 5 and 13, Pawlowski discloses a multiplexer that is driven based on the adaptation data, by showing in figure 2, data buffered from the data retriever is input into an I/O interface 44.

### ***Response to Arguments***

14. With respect to independent claims 1 and 9, the Applicant alleges that Pawlowski does not teach outputting an amount of data larger than the amount between neighboring output start addresses. The Examiner believes that Pawlowski still reads upon the claim language because it still outputs/transfers the prefetched cache line response to the first request. The desired data is repeatedly referred by Pawlowski as "the requested data" even though it may require a prefetch transfer. As recited in column 2, lines 30-35, a peripheral may request less than a cache line of data in one transaction and greater than a multiple number of cache lines of data in another transaction.

15. Because of the reasons given above, the rejections to claims 1-7 and 9-14 are maintained.

### ***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

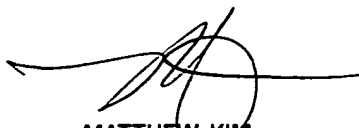
17. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar data access systems.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Anderson whose telephone number is (703) 306-5931. The examiner can normally be reached on Monday-Friday, 2nd Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (703) 305-3821. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
Matthew D. Anderson  
April 3, 2003

  
MATTHEW KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100